

On the taxonomic status of *Diapterus peruvianus* (Cuvier, 1830) and reinstatement of *Diapterus brevirostris* (Sauvage, 1879) (Teleostei: Gerreidae)

by

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ABSTRACT. - The re-examination of the holotype of *Gerres peruvianus* Cuvier, 1830 revealed that it is distinct from “*Diapterus peruvianus*” [s.l.], a well-known species along the tropical eastern Pacific coast. Morphological and meristic examinations of the syntypes of *G. brevirostris* Sauvage, 1879 show that it is a valid species, corresponding to the *Diapterus*-like specimens traditionally assigned to *D. peruvianus* (non Cuvier). Thus, *D. brevirostris* is herein reinstated as a valid gerreid species, and *G. peruvianus* is considered as *incertae sedis* until its status is resolved.

RÉSUMÉ. - Validité de *Diapterus peruvianus* (Cuvier, 1830) et réhabilitation de *Diapterus brevirostris* (Sauvage, 1879) (Gerreidae).

Un nouvel examen de l'holotype de *Gerres peruvianus* Cuvier, 1830 a montré que cette espèce était distincte des spécimens habituellement attribués à “*Diapterus peruvianus*” [s.l.], une espèce commune du Pacifique tropical est. La morphologie et les caractères méristiques des syntypes de *G. brevirostris* Sauvage, 1879 montrent que cette espèce est valide et correspond au diaptériforme à large distribution dans le Pacifique est et non à *G. peruvianus* Cuvier. En conséquence, *D. brevirostris* est réhabilitée et *G. peruvianus* est considérée comme *incertae sedis* dans l'attente d'un éclaircissement de son statut.

Key words. - Gerreidae - *Diapterus* - *Gerres brevirostris* - *Gerres peruvianus* - ISE - Taxonomy.

The amphi-American genus *Diapterus* was proposed by Ranzani (1842) to include gerreid species characterized by the presence of serrated margins in the preopercular bone, preorbital (lachrymal) smooth, body deep and laterally compressed, silvery body without lateral dark stripes, pointed or pinniform pharyngeal teeth, second and third dorsal and anal spines very strong and elevated, and the anterior interhaemal bone long and arrow-shaped (Meek and Hildebrand, 1925; Deckert, 1973; Deckert and Greenfield, 1987). At present, the genus *Diapterus* comprises four recognized species with tropical and subtropical distributions: *D. aureolus* (Jordan & Gilbert, 1882), *D. peruvianus* (Cuvier, 1830) [s.l.] in the eastern Pacific, *D. auratus* (Ranzani, 1842), and *D. rhombeus* (Cuvier, 1829) along the western Atlantic coast (Cervigón, 1993; Allen and Robertson, 1994; Bussing, 1995; De la Cruz-Agüero *et al.*, 1997; Greenfield and Thomerson, 1997; Hoese and Moore, 1998; Castro-Aguirre *et al.*, 1999; Gilmore and Greenfield, 2002; Jiménez-Prado and Béarez, 2004; Nelson *et al.*, 2004; McEachran and Fechhelm, 2005; Miller *et al.*, 2005).

In a critical study of the *Diapterus* species by Deckert (1973) and Deckert and Greenfield (1987), *D. brevirostris* (Sauvage, 1879) as a valid gerreid species, and its distinction from *D. peruvianus* was recognized for the first time. However, this finding was not published formally (e.g. Deckert, 1973) and was mentioned only briefly by Deckert and Greenfield (1987); thus, the information was overlooked in the subsequent literature, in which the assertion of Jordan *et al.* (1895) presently prevails, i.e. *Gerres brevirostris* is considered as the junior synonym of *G. peruvianus*. However, Bauchot and Desoutter (1989) did not recognize the synonymy of *D. peruvianus* and its precedence over *D. brevirostris*, and proposed maintaining the identity of the latter as a valid species within the Gerreidae.

To assess the taxonomic status of *Diapterus brevirostris* and *D. peruvianus*, we examined type specimens and other materials from several collections, the results of which we present here. In this way, we recognized *D. brevirostris* as a valid species of Gerreidae, and provide the re-diagnosis of the species. Moreover, we validate the identity of *Gerres peruvianus* Cuvier, and propose that it should be considered

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incertae sedis, in accordance with the International Code of Zoological Nomenclature (ICZN, 1999).

MATERIALS AND METHODS

Holotype. - *Gerres peruvianus* MNHN 0000-9466, 116 mm SL, Paita (Peru), coll. Lesson and Garnot. *G. peruvianus* Cuvier, 1830. *Hist. Nat. Poiss.*, VI: 467.

Syntypes. - *Gerres brevirostris* MNHN A-0874, 121 mm SL and MNHN 1986-0662, 127 mm SL, Rio Guayas (Ecuador), coll. André. *G. brevirostris* Sauvage, 1879. *Bull. Soc. Philomath.*, Paris, 7(3): 208.

Other specimens. - *Gerres brevirostris* MNHN 1883-786, 110 mm SL and MNHN 1883-0787, 84 mm SL, La Union (El Salvador), coll. Bocourt. *Diapterus brevirostris* (previously identified as *D. peruvianus*): MNHN 2006-0763, 86 mm SL, Salango (Ecuador), coll. P. Béarez; CICIMAR-CI s/n, 97-225 mm SL, Puerto Paredon, Chiapas (Mexico), coll. A.F. González-Acosta. *D. brevirostris* (previously identified as *D. auratus*): MNHN 1901-0316, 72 mm SL, California bay, Gulf of California (Mexico), coll. Diguët.

Comparative material. - *Gerres abbreviatus* [*sic*] MNHN 0000-9609, 72-103 mm SL, Vietnam, coll. Harmand; MNHN 1932-0052, 140 mm SL, Ambila-lemaitso (Madagascar), coll. Decary; MNHN 1963-0568, 56-73 mm SL, Sihanoukville (Cambodia), coll. d'Aubenton and Fily; MNHN 2005-2136, 109-157 mm SL, Poulo Condore (Vietnam), coll. Kempf, *G. abbreviatus* Bleeker, 1850, *Verh. Bat. Gen.*, 23: 11. Holotype of *Gerres richii* MNHN 0000-9468, 173 mm SL, Mer des Indes [*sic*], coll. Riche (exped.

d'Entrecasteaux), and paratype MNHN 0000-9469, San Matheo al Mar, près d'Acapulco [*sic*], coll. Deppe, *G. richii* Cuvier, 1830, *Hist. Nat. Poiss.*, VI: 469.

Measurements and counts

Meristics and morphometrics follow Hubbs and Lagler (1964), with additions from González-Acosta *et al.* (2005). Material examined is based on 36 specimens from the institutions whose acronyms are cited in Leviton *et al.* (1985), in addition to those of CICIMAR-CI (Centro Interdisciplinario de Ciencias Marinas-IPN, México). Morphometric data were taken using a digital caliper (0.01 mm); maximum, minimum, and average measurements are presented (Tab. I). Identification of species was corroborated using original descriptions and taxonomic keys by Cuvier and Valenciennes (1830), Sauvage (1879), Deckert (1973), and Bussing (1995).

DIAPTERUS BREVIROSTRIS (SAUVAGE, 1879)

Fig. 1A, B

Gerres brevirostris Sauvage, 1879: 208 (orig. descr.; type locality: Rio Guayas, Ecuador).

Diapterus brevirostris (Sauvage, 1879). Deckert, 1973: 14, 25-28 (new combination). Grove and Lavenberg, 1997: 396 (list).

Table I. - Morphometric data of gerreid species: *Diapterus brevirostris* (DB), *Gerres peruvianus* (holotype: GP) and *G. abbreviatus* (= *erythraeus*: GA). [*Caractères morphométriques*.]

Character	DB (n = 18)			GP (holotype)			GA (n = 17)		
	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD
Standard length	84.0 - 224.8	120.5	30.9	121	-	-	56.0 - 157.0	89.8	35.9
Body depth	42.0 - 105.0	59.1	14.6	52	-	-	26.0 - 77.0	43.0	17.7
Head length	27.0 - 79.0	41.3	10.9	36	-	-	21.0 - 49.0	29.8	11.0
Head weigth	30.9 - 78.8	44.2	13.7	45	-	-	22.0 - 67.0	36.6	15.5
Predorsal length	41.0 - 104.1	59.1	14.2	48	-	-	25.0 - 72.0	40.8	16.5
Postorbital length	13.0 - 38.5	18.6	5.7	16	-	-	8.0 - 26.0	13.4	5.3
Snout length	9.0 - 26.5	12.5	3.9	11	-	-	6.0 - 19.0	10.0	4.0
Interorbital width	9.0 - 23.1	12.8	3.1	13	-	-	7.0 - 19.0	10.5	4.2
Eye diameter	10.0 - 19.9	12.8	2.3	13	-	-	8.0 - 18.0	11.1	3.7
Maxillary length	10.0 - 32.8	16.0	4.8	13	-	-	7.0 - 19.0	10.6	4.2
Pectoral length	26.6 - 59.0	34.3	9.1	35	-	-	17.0 - 65.0	34.0	15.5
Distance between the tips of the second dorsal and second anal spines	78.0 - 165.6	97.0	21.7	96	-	-	44.0 - 125.0	72.7	26.7
Caudal peduncle length	13.4 - 32.6	18.1	4.6	24	-	-	10.0 - 30.0	17.6	6.5
Anal-fin base length	18.0 - 48.0	27.1	6.4	20	-	-	9.0 - 26.0	15.7	6.0
Second dorsal-spine length	24.0 - 43.0	32.6	4.0	24	-	-	13.0 - 50.0	25.3	11.2
Third dorsal-spine length	25.0 - 43.0	31.8	3.9	26	-	-	12.0 - 44.0	21.6	9.7
Second anal-spine length	20.0 - 38.6	26.0	4.2	21	-	-	9.0 - 28.0	15.1	5.9
Third anal-spine length	21.0 - 41.0	26.3	4.5	20	-	-	9.0 - 26.0	15.0	5.6

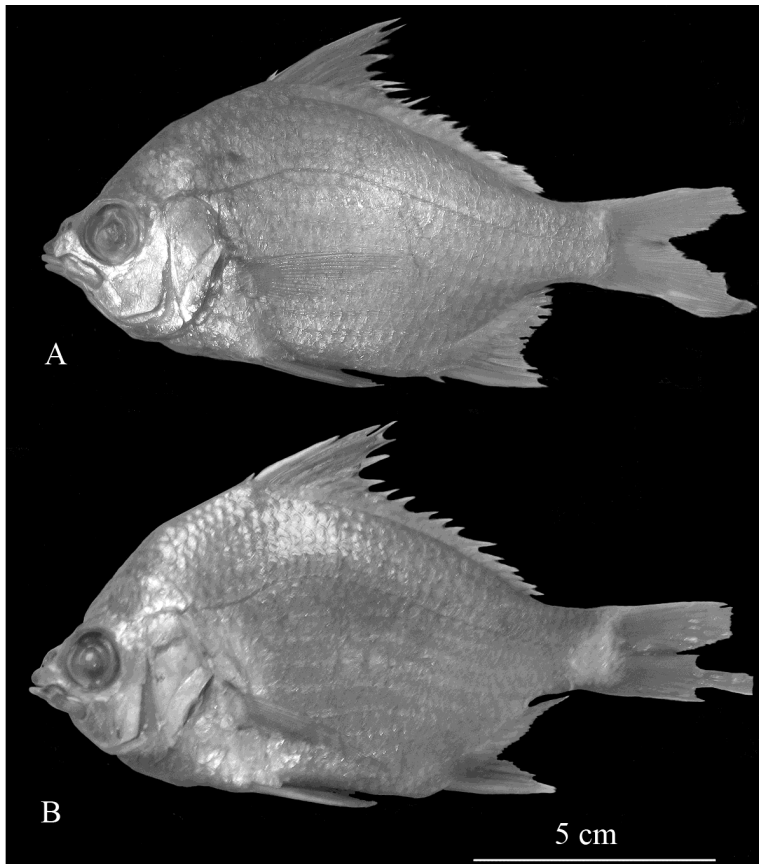


Figure 1. - *Diapterus brevirostris*. **A:** Lectotype MNHN A-0874; **B:** Paratype MNHN 1986-0662. Type locality: Rio Guayas, Ecuador.

Gerres peruvianus Cuvier, 1830. Evermann and Meek, 1883: 117, 123 (key; list). Evermann and Meek, 1886: 258, 266, 271 (key; list; descr.; distr.). Jordan *et al.*, 1895: 472 (list). Jordan and Evermann, 1898: 1376 (descr.). Jordan and Evermann, 1923: 448 (list). [synon.] [non] *G. peruvianus* Cuvier, 1830.

Diapterus peruvianus (Cuvier, 1830). Meek and Hildebrand, 1925: 594 (new combination). Jordan *et al.*, 1930: 342 (list). Hildebrand, 1946: 240 (descr.; distr.). Chirichigno, 1963: 52 (catalog.; list). Castro-Aguirre, 1978: 111 (catalog.; keys; distr.). Yáñez-Arancibia, 1978: 77, 161, 203 (descr.; distr.; ecol. notes). Andreata, 1988: 82 (list). Bussing and López, 1993: 114 (list). Allen and Robertson, 1994: 142 (catalog.; distr.). Bussing, 1995: 1119 (descr.). Amezcua, 1996: 102 (catalog.; descr.; distr.). De la Cruz-Agüero *et al.*, 1997: 143, 322 (catalog.). Chirichigno and Vélez, 1998: 344 (catalog.). Castro-Aguirre *et al.* 1999: 319, 322 (catalog.; keys; distr.). Jiménez-Prado and Béarez, 2004: 115 (catalog.; descr.). Nelson *et al.*, 2004: 143 (list) [synon.] [non] *Gerres peruvianus* Cuvier, 1830.

Diapterus peruvianus (Sauvage, 1879). Jiménez-Rosenberg *et al.*, 2003: 479 [lapsus calami] [non] *Gerres peruvianus* Cuvier, 1830.

Diapterus richi (Cuvier, 1830). Andreata, 1988: 84 [synon.] [non] *Gerres richii* Cuvier, 1830.

Diagnosis

Posterior and inferior margins of preopercular bone notably serrated; preorbital (lachrymal) smooth; jugal (infraorbital 2) sometimes with fine serrations; pharyngeal teeth pointed or piniform; urohyal bone rudder-shaped (Fig. 2).

Description

Dorsal IX-10; anal III-8; pectorals iii, 11, ii; pelvics I-5; pored lateral-line scales, 35-37; gill rakers short and villiform, 13-14 on the lower limb of the first branchial arch. Body deep, rhomboidal, and laterally compressed, without lateral dark stripes on the body (sometimes a product of reflections by the scales). Predorsal profile convex or almost straight, ascending abruptly from the snout to the base of the first dorsal spine. No scales on the premaxillary groove. The upper margin of the premaxilla reaches the midpoint of the orbit diameter. Dorsal fin continuous; posterior margin of dorsal deeply concave. Second dorsal spine thicker and almost equal in length to the third dorsal spine; second dorsal spine reaches the bases of the second or third dorsal ray. Anal fin with a scale sheath on its base, covering to the midpoint of

the extended anal fin. Second anal spine thicker and almost equal in length to the third anal spine (except when depressed); depressed second anal spine reaches the base of the last anal ray, but not the midpoint of the caudal peduncle length. Pectoral fins slender and lanceolate, extending to behind the vent. Pelvic fins reach the vent, but not the anal-fin origin. Caudal deeply forked, lobes equal in length. Lateral line continuous, extending from the branchial opening to the caudal-fin base, with a gentle curvature above the pectoral-fin margins. Lips small and mouth protractile. Posterior and inferior margins of preorbital (lachrymal) not serrated. Infraorbital 2 (jugal), interopercle and subopercle with posterior and inferior margins, sometimes with fine serrations. Cycloid scales on the head and ctenoid on the trunk. Meristic frequencies and morphometric relationships based on type series, and comparative materials are presented in tables II and III, respectively.

Coloration

Body silvery in fresh specimens, sides of body lack dark stripes; dorsal fin with black upper margin and blackish membranes; pectoral fins not coloured, membranes sometimes blackish; anal and pelvic fins yellowish, frequently

with blackish membranes; caudal fin not coloured. Preserved organisms have yellow-silvery body; brownish dorsum, and silvery-yellow belly; dorsal, anal, pectoral, pelvic, and caudal fins have blackish membranes.

Distribution

Type locality of *Diapterus brevirostris* corresponds to Rio Guayas, Ecuador (Sauvage, 1879). Based on its recognition as a valid species, and according to records from collections and literature reports, *D. brevirostris* is distributed along the tropical eastern Pacific (TEP) coast from western coast of Baja California (Bahia Magdalena, BCS), including the Gulf of California, south to northern Peru (e.g., Deckert, 1973; Allen and Robertson, 1994; Bussing, 1995; De la Cruz-Agüero *et al.*, 1997; Chirichigno and Vélez, 1998; Castro-Aguirre *et al.* 1999; Jiménez-Prado and Béarez, 2004).

Ecological notes

Marine and euryhaline, inhabits bays, estuaries, and coastal lagoons bordered by mangroves, over sandy or muddy bottoms; frequently enters continental waters (Allen and Robertson, 1994; Castro-Aguirre *et al.*, 1999). Carnivorous feeding based on the consumption of benthic organisms (copepods, ostracods, foraminifera, sponges, polychaetes, and molluscs), fishes, and aquatic vegetation (Yáñez-Arancibia, 1978; Chávez and Hammann, 1989). Maximum size: 380 mm TL (Amezcuca, 1996).

DISCUSSION

Jordan *et al.* (1895) first questioned the validity of *Gerres brevirostris* Sauvage, 1879, arguing that it was "not evidently different from" *G. peruvianus* Cuvier, 1830. How-

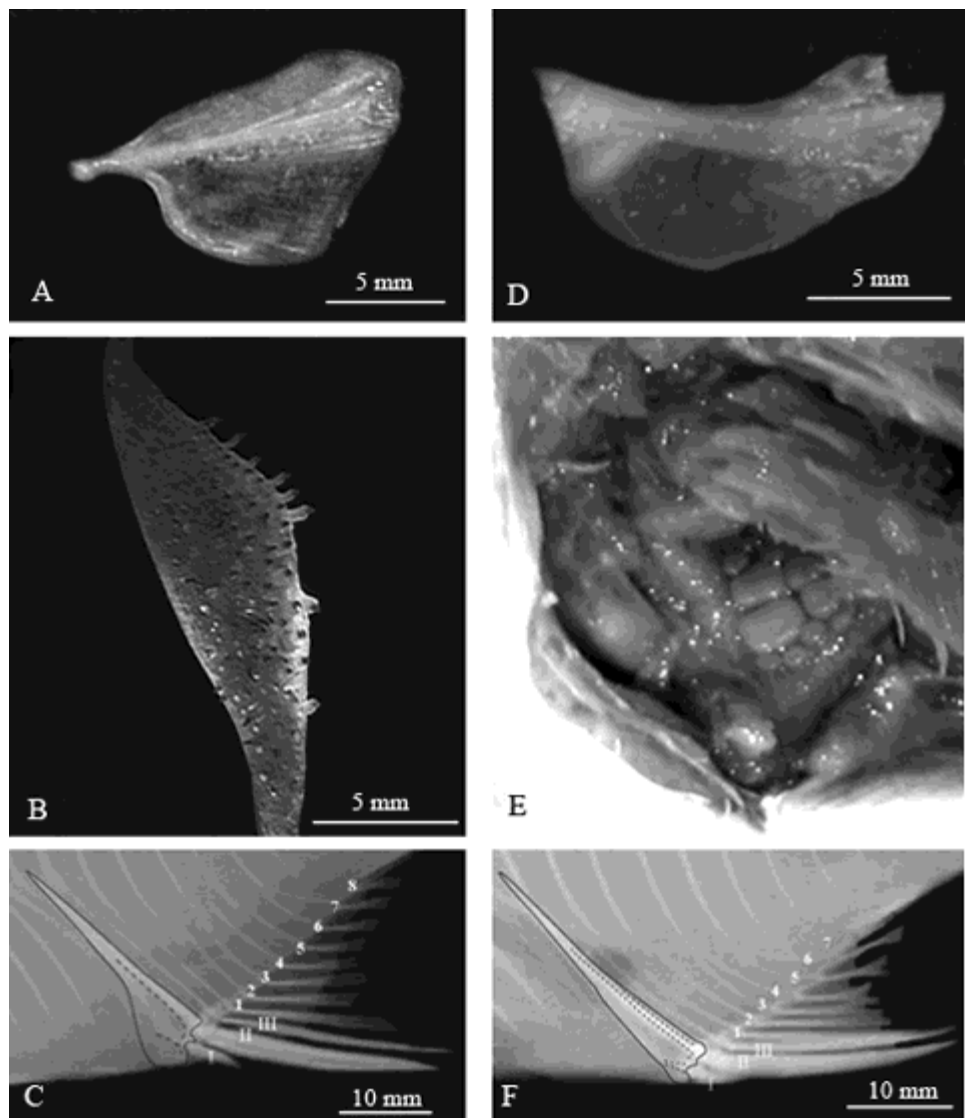


Figure 2. - Osteological characters: urohyal (A, D), pharyngeal teeth (B, E), and interhaemal and anal fin elements (C, F) of *Diapterus brevirostris* and *Gerres peruvianus*, respectively. [Caractères osseux : urohyal (A, D), dents pharyngiennes (B, E), interhaémaux et éléments de la nageoire anale (C, F) de *D. brevirostris* et *G. peruvianus*, respectivement.]

ever, Jordan and Evermann (1898) synonymized both species on the basis of their original descriptions, as well as comparative observation of specimens from the TEP, but not on the basis of type materials. This conclusion has been accepted broadly by authors of subsequent revisions of the species taxonomy (e.g., Boulenger, 1899; Meek and Hildebrand, 1925) up to the present (cf. Eschmeyer, 2006).

Almost thirty years ago, *Diapterus brevirostris* was recognized as a valid gerreid species in the eastern Pacific, based on the critical review of the genus *Diapterus* by Deckert (1973) and Deckert and Greenfield (1987). In the former the *Diapterus*-like specimens belonging to *D. brevirostris* were established for the first time as distinct from the holotype of *Gerres peruvianus*. Unfortunately, these important findings regarding the taxonomic status of this Pacific species were never published in a formal review of the TEP species of *Diapterus*. Consequently, confusion over the identity of these species has prevailed for several years in the literature of the area (e.g., Castro-Aguirre, 1978; Bussing and López, 1993; Bussing, 1995; Amezcua, 1996; De la Cruz-Agüero *et al.* 1997; Chirichigno and Vélez, 1998; Castro-Aguirre *et al.*, 1999; Nelson *et al.*, 2004; Jiménez-Prado and Béarez, 2004; Miller *et al.*, 2005).

The examination of the holotype of *Gerres peruvianus*, confirmed for us the statements of Deckert (1973) and Deckert and Greenfield (1987), of which the first led us to recognize *G. peruvianus* as *incertae sedis*, in accordance with the general provisions for named-bearing types (Art. 67.2.5) of the ICZN (1999). Based on X-ray analysis of the type specimen, the presence of anal formulae III, 7 was found, which differs from the III, 8, reported for the yellow-fin mojarra "*Diapterus peruvianus*" [s.l.]. Comparative osteology showed a conspicuous pattern of molar-like pharyngeal teeth, not pointed as in *Diapterus* species (Fig. 2B, E). Additionally, the saddle-shaped morphology of the urohyal bone of *G. peruvianus* is different from the rudder shape in *Diapterus*-like specimens that include *D. brevirostris*. We have observed similar saddle morphology in the urohyal of the representative species of the genera *Eucinostomus* Baird & Girard, 1855 and *Gerres* [s.s.] Quoy & Gaimard (ex Cuvier), 1824. Considering the different traits that characterize the holotype of *G. peruvianus*, we conclude that it does not correspond to the *Diapterus*-like fishes distributed along the TEP and has been erroneously identified as *D. peruvianus* [s.l.].

Formerly, Deckert (1973) regarded the holotype of *Gerres peruvianus* as identical to *G. abbreviatus* Bleeker, 1850 [sic], a synonym of *G. erythrouros*

(Bloch, 1791) currently known from India, southeastern Asia, New Guinea, Micronesia, northern Australia, southern China, and Japan (Iwatsuki *et al.*, 1998). We examined several specimens of *G. abbreviatus* [sic] from the MNHN and we observed great morphological similarity between the specimen of *G. peruvianus* and those of *G. abbreviatus* [sic] (e.g., body deep and laterally compressed; predorsal profile elevated and almost straight; pectoral fins extended to the vent and almost reaching the anterior margin of the anal fin).

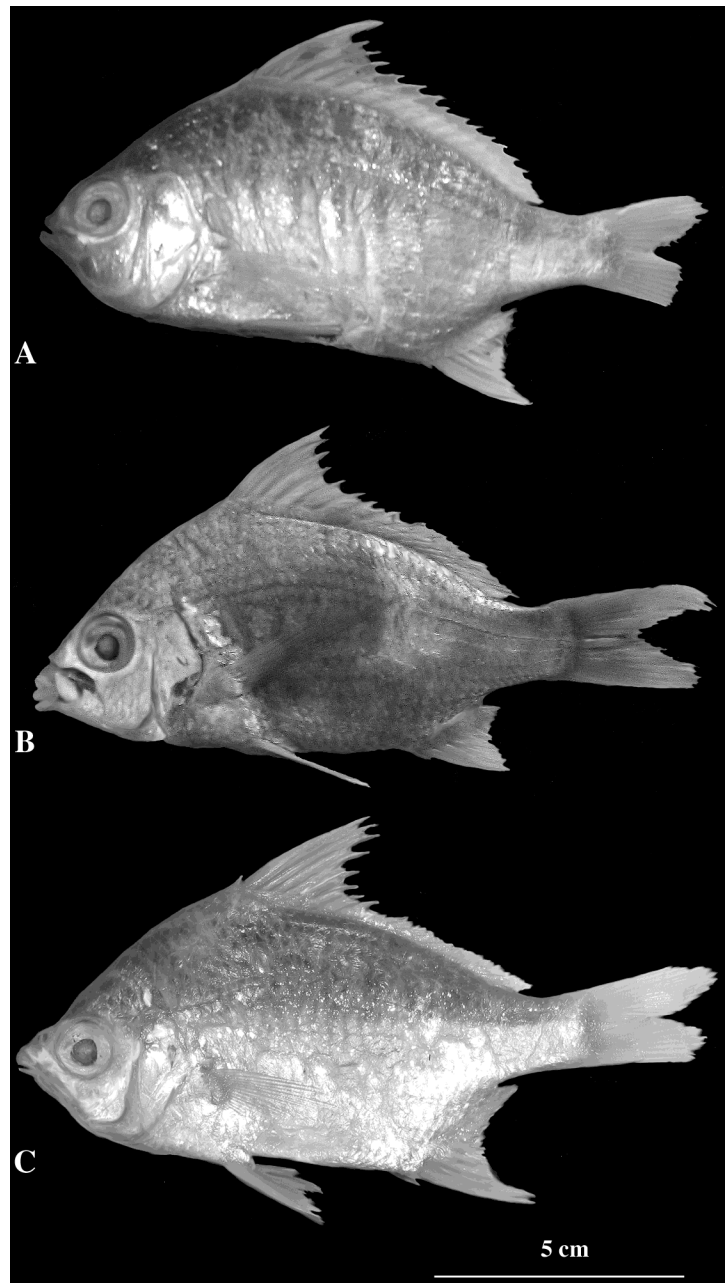


Figure 3. - A: *Gerres peruvianus*, holotype MNHN 0000-9466; B: *Gerres abbreviatus* (= *erythrouros*) MNHN 0000-9609. C: *Gerres richii*, paratype MNHN 0000-9469, San Matheo al Mar près de Acapulco [sic].

Likewise, meristic characters were identical in some cases: dorsal fin IX-10; anal fin III-7; seven gill rakers in the lower limb of the first branchial arch, not four as was reported by Iwatsuki *et al.* (1998); and 36-39 pored scales on the lateral line. Osteological analysis revealed some similarities (e.g., posterior margin of preopercle finely serrated and molar-like pharyngeal teeth). The group of traits previously listed partially confirms the findings of Deckert (1973) in relation to the similarity in external morphology of *G. peruvianus* and *G. abbreviatus* (Fig. 3A, B). However, we noted the presence of 4 to 11 lateral dark stripes on the body sides in the specimens of *G. abbreviatus* (= *erythrouros*, *sensu* Iwatsuki *et al.*, 1998) that distinguish them from the holotype of *G. peruvianus*. Related to this matter, Cuvier and Valenciennes (1830) mentioned that the apparent presence of lateral stripes on the body sides was due to reflections on the scales in the original diagnosis of *G. peruvianus*, and not to a defined pattern of coloration [*sic*]. In this regard, we observed a pattern of vertical bars in the holotype of *G. peruvianus* (Fig. 3A) that resembles that of *G. cinereus* (Walbaum, 1792). Fresh specimens of *Diapterus brevirostris* (MNHN 2006-0763) non *G. peruvianus* from the Gulf of Guayaquil (Ecuador) did not show a distinctive pattern of vertical or longitudinal bars, so the pigmentation pattern could have been overlooked by Cuvier in the original description of *G. peruvianus* (in Cuvier and Valenciennes, 1830). Based on the former assumptions, and taking in account the different distributional range of *G. erythrouros* (Indo Pacific) and *G. peruvianus* (eastern Pacific), we reject the idea of Deckert (1973) to consider taxonomic correspondence between the two species.

Additional observations on the holotype of *Gerres peruvianus* lead us to recognize its great resemblance to the

amphi-American *G. cinereus*, due primarily to the presence of vertical bars on the body sides, molar-like pharyngeal dentition, as well as the anal fin formulae III, 7 (not III, 8, confirmed by X-ray analysis). Nevertheless, the type specimen of *G. peruvianus* differs most distinctively from *G. cinereus* in having serrated margins on the preopercular bone; however, we have observed serrations on the margins of the preopercle in some specimens of *G. cinereus* from Ecuador. This concern should be addressed in future studies, focusing on clarifying the distinction between the species. Hence, we prefer to consider *G. peruvianus* as *incertae sedis* for the time being.

To assess the taxonomic status of *Diapterus brevirostris*, we examined the syntypes and other comparative material of *Gerres brevirostris*. Regarding the meristic and morphometric characteristics measured in these specimens (Tabs. I, II), we found them to correspond to specimens widely known in the TEP as "*D. peruvianus*" [*s.l.*]. Some traits that support this finding are: pointed pharyngeal teeth; the rudder-shape morphology of the urohyal bone (Fig. 2); and anal formulae III, 8 (Tab. II). Moreover, these observations validate the identity of *D. brevirostris* (Sauvage) as a valid gerreid species with distribution in the TEP, in place of *D. peruvianus* (non Cuvier, 1830). Morphometric comparisons of *D. brevirostris* and the holotype of *G. peruvianus* confirm the distinction in several body measurements (e.g., length of second dorsal spine in standard length, length of second anal spine in standard length, Tab. II). Thus, *D. brevirostris* should be considered a valid gerreid species, and *G. peruvianus* should be considered as *incertae sedis* in accordance with ICZN (1999).

Two specimens from the type series (syntypes) of *Gerres brevirostris* were erroneously included by Andreata (1988)

Dorsal-fin elements: spines (romans) and rays (arabics)									
	IX-9	IX-10	X-10						
<i>D. brevirostris</i>	1	17		18					
<i>G. peruvianus</i> (holotype)		1		1					
<i>G. abbreviatus</i> (= <i>erythrouros</i>)		17		17					
Anal-fin elements: spines (romans) and rays (arabics)									
	III-7	III-8	III-9	n					
<i>D. brevirostris</i>		18		18					
<i>G. peruvianus</i> (holotype)	1			1					
<i>G. abbreviatus</i> (= <i>erythrouros</i>)	17			17					
Gill raker on the lower limb of the first branchial arch									
	7	8	9	10	11	12	13	14	n
<i>D. brevirostris</i>					3	10	4	1	18
<i>G. peruvianus</i> (holotype)	1								1
<i>G. abbreviatus</i> (= <i>erythrouros</i>)	6	10							16
Pored scales on lateral line									
	35	36	37	38	39	40	41	n	
<i>D. brevirostris</i>	1	2	5	4	5	1		18	
<i>G. peruvianus</i> (holotype)		1							
<i>G. abbreviatus</i> (= <i>erythrouros</i>)		1	5	3	5	2	1	17	

Table II. - Meristic frequencies of *Diapterus brevirostris*, *Gerres peruvianus* (holotype) and *G. abbreviatus* (= *erythrouros*). [Fréquences méristiques.]

Table III. - Morphometric comparisons among *Diapterus brevirostris* (DB), *Gerres peruvianus* (holotype: GP), and *G. abbreviatus* (= *erythrouros*: GA). Interval in millimetres, average in brackets. [Comparaisons des caractères morphométriques. Intervalles en millimètres, moyennes entre crochets.]

Ratios	DB (n = 18)	GP (n = 1)	GA (n = 17)
Body depth in standard length	1.85-2.2 [2.03]	2.32	1.99-2.2 [2.1]
Distance between the tips of the second dorsal and second anal spines in standard length	1.05-1.36 [1.24]	1.26	1.7-2.3 [1.99]
Head length in standard length	2.66-3.33 [2.93]	3.36	2.6-3.27 [2.99]
Length of second dorsal-spine in standard length	3.1-5.68 [3.66]	5.04	2.17-5.15 [3.73]
Length of second dorsal-spine in head length	1.02-1.99 [1.25]	1.38	0.74-1.69 [1.25]
Length of second dorsal-spine in depth body	1.93-2.72 [2.25]	2.16	1.07-2.53 [1.78]
Length of second dorsal-spine in head height	1.52-2.65 [1.79]	1.87	0.89-2.07 [1.5]
Length of third dorsal-spine in second dorsal-spine length	0.92-1.1 [0.99]	0.92	1.03-1.81 [1.17]
Length of second anal-spine in standard length	3.93-5.82 [4.59]	5.76	5.3-6.7 [5.91]
Length of second anal-spine in head length	1.34-2.04 [1.57]	1.71	1.69-2.3 [1.98]
Length of second anal-spine in body depth	1.93-2.72 [2.25]	2.47	2.41-3.25 [2.82]
Length of second anal-spine in length of anal-fin base	0.87-1.24 [1.03]	0.95	0.9-1.37 [1.04]
Length of second anal-spine in caudal peduncle length	0.51-0.84 [0.69]	1.14	0.92-1.5 [1.17]
Length of third anal-spine in second anal-spine length	0.92-1.09 [0.98]	1.05	0.84-1.09 [1.0]
Length of second anal-spine in second dorsal-spine length	1.02-1.35 [1.26]	1.14	1.18-2.63 [1.65]
Length of interorbital space in head length	2.73-3.71 [3.23]	2.76	2.57-3.14 [2.87]
Maxillary length in head length	2.4-2.97 [2.6]	2.76	2.4-3.14 [2.83]
Orbit diameter in head length	2.7-3.96 [3.18]	2.76	2.2-3.1 [2.64]
Snouth length in head length	2.93-3.87 [3.34]	3.27	2.57-3.6 [3.0]
Postorbital length in head length	1.99-2.45 [2.24]	2.25	1.8-2.62 [2.24]

as a synonym of *Diapterus peruvianus* (Cuvier, 1830) [non *G. peruvianus* Cuvier, 1830] and *D. richii* (Cuvier, 1830) [non *G. richii* Cuvier, 1830], and designated as lectotype (MNHN A-0874) and paralectotype (MNHN 1986-0662), respectively. However, these designations were not recognized by Bauchot and Desoutter (1989). We propose designation of the lectotype (MNHN A-0874) and paralectotype (MNHN 1986-0662) for *D. brevirostris*, on the basis of specimens first designated by Andreata (1988). Likewise, we do not recognize any synonymy of *G. peruvianus* or *G. richii* Cuvier, 1830 with *D. brevirostris*, as established by the same author (Andreata, 1988), because we have demonstrated previously the distinctive morphology that characterizes the specimens of *D. brevirostris* and the type specimen of *G. peruvianus*. Regarding the assumption that Sauvage (1879) could verify the comparative material analyzed by Cuvier, he was able to distinguish the specimen of *G. peruvianus* from those of *G. brevirostris* when he described the latter. For instance, Sauvage mentioned the resemblance of the latter to *G. rhombeus* Cuvier, 1829, a species distributed in the western Atlantic, only in the original description of *G. brevirostris*.

We found type specimens of *Gerres richii* to be morphologically similar to those of *Diapterus brevirostris* but the holotype of *G. richii* is in poor condition (e.g., spines and rays broken, without pharyngeal arches and no body scales), which made the study difficult. The type locality of the holotype also has been confused: the museum label indicates

“Mer des Indes” [*sic*] which actually corresponds to the Indian Ocean (pers. comm. M. Desoutter), not the West Indies as was considered by Andreata (1988). Nevertheless, the presence of this species in the Indian Ocean has been considered erroneous by Fricke (1999) and Iwatsuki *et al.* (1999).

On the other hand, the paratype of *Gerres richii* (Fig. 3C) was examined, and was found to be *Diapterus brevirostris* (Fig. 1) on the basis of pointed pharyngeal teeth, serrated preopercle, and other shared traits. The locality of this specimen is reported as “San Matheo al Mar, près d’Acapulco”. Further studies are needed to clarify the status of *G. richii* because the holotype is damaged, and the paratype from San Matheo al Mar was not used by Cuvier in the original description of the species (Cuvier and Valenciennes, 1830).

Finally, we recognize *Diapterus brevirostris* (Sauvage, 1897) as a valid species of Gerreidae, not a junior synonym of *Gerres peruvianus*. At this time, *G. peruvianus* Cuvier, 1830 is considered as *incertae sedis*.

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